

66 OK 12/13/01



United States
CONSUMER PRODUCT SAFETY COMMISSION
Washington, D.C. 20207

MEMORANDUM

DATE: 12/13/01

TO : ES

Through:  Todd A. Stevenson, Secretary, OS

FROM : Martha A. Kosh, OS

SUBJECT: Standard to Address Open Flame Ignition of
Mattresses/Bedding; ANPR

ATTACHED ARE COMMENTS ON THE CF 02-1

<u>COMMENT</u>	<u>DATE</u>	<u>SIGNED BY</u>	<u>AFFILIATION</u>
CF 02-1	10/16/01	Anthony Padilla	1708 Melrose Ave E. #502 Seattle, WA 98122
CF 02-2	12/07/01	John Biechman Vice President Government Affairs	National Fire Protection Association 1110 N Glebe Road Suite 210 Arlington, VA 22201
CF 02-3	12/07/01	Jeff Simmons Dept. Manager	SGS US Testing Co., Inc <u>jeffrey.simmons@sgs.com</u>
CF 02-4	12/07/01	James McIntyre Counsel to Polyurethane Foam Association	McIntyre Law Firm, PLLC Madison Office Building Suite 1101 1155 15 th St, NW Washington, DC 20005
CF 02-5	12/10/01	Joseph G. Manta Counsel for Hill- Rom Company, Inc	Klett Rooney Lieber & Schorling Two Logan Square, 12 th Floor Philadelphia, PA 19103
CF 02-6	12/10/01	Harrison Murphy President	Ventex, Inc. P.O. Box 1038 Great Falls, VA 22066

Standard to Address Open Flame Ignition of Mattresses/Bedding;
ANPR

CF 02-7	12/10/01	Wendy M. Yoviene General Counsel for Decorative Fabric Assoc. Coalition of Converters of Decorative Fabrics & Calico Corners	Thelen Reid & Priest LLP, Market Square, Suite 800 701 Pennyslanvia Ave NW Washington, DC 20004
CF 02-8	12/10/01	Phillip Wakelyn Ph.D., Senior Scientist, Environmental Safety & Health	National Cotton Council of America 1521 New Hampshire Ave, NW Washington, DC 20036
CF 02-9	12/10/01	Patty Adair Asst. Director Textile Products & Standards	American Textile Manufacturers Institute 1130 Connecticut Ave NW Suite 1200 Washington, DC 20036
CF 02-10	12/10/01	Dr. M. Hirschler	GBH International 2 Friar's Lane Mill Valley, CA 94941
CF 02-11	12/10/01	NASFM	National Association of State Fire Marshals 1319 F Street, NW Suite 301 Washington, DC 20004
CF 02-12	12/10/01	Frederick Locker Counsel for the Juvenile Product Manufactuers Association	Locker Greenbert & Brainin, P.C. 420 Fifth Avenue New York, NY 10018
CF 02-13	12/10/01	Fran Lichtenberg Exec. Director	Alliance for the Polyurethanes Industry 1300 Wilson Boulevard Suite 800 Arlington, VA 22209
CF 02-14	12/10/01	Carl Ogburn Vice President	Chestnut Ridge Foam Inc crfoam@westol.com
CF 02-15	12/10/01	Patricia Martin Exec. Director	Sleep Products Safety Council 501 Wythe Street Alexandria, VA 22314

Standard to Address Open Flame Ignition of Mattresses/Bedding;
ANPR

CF 02-16	12/10/01	Park B. Smith President	Home Fashion Products Association 355 Lexington Ave New York, NY 10017
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October 16, 2001

To: Office of the Secretary
Consumer Safety Product Commission
Washington, DC 20207-0001
E-mail: cpssc-os@cpssc.gov

Re: Mattress ANPR (Advance Notice of Proposed Rule)

Thank you for the opportunity to comment on the proposed flammability standard for mattresses. The ANPR requests comment on six specific topics for the purpose of developing a rule (flammability standard for mattresses) that will significantly reduce the number of deaths, injuries, and property loss resulting from fires where mattresses or bedding items were first to ignite. The comments below focus on four of the six topic areas suggested; namely:

- The appropriate scope of the standard, i.e., particular items that should be included or excluded.
- Existing standards or portions thereof.
- Adverse consequences that an open flame standard would have on the existing cigarette ignition of mattresses or bedding.
- Materials that could improve mattress performance.

The following comments are intended (1) to encourage the Commission to revisit the five-year study and/or seek additional data for the purpose of tailoring a meaningful and reliable flammability standard that is practical in application, i.e., not cost prohibitive, or (2) absent additional data, to encourage the Commission to err on the side of defining a meaningful and reliable flammability standard, rather than erring on the side of minimizing manufacturers' costs; (3) to encourage the commission to clearly define the requirements of meaningful and reliable flammability standard that will result in the design of effective laboratory tests; and (4) to discourage the commission from selecting one of the existing thirteen tests listed in the ANPR.

The Appropriate Scope of the Standard

Development of a meaningful and reliable flammability standard requires a clear understanding of the hazards typical of mattress fire scenarios, i.e., multivariate analysis of real life scenarios. Such analysis requires significant observation and data collection. However, the results of the five-year study presented in the ANPR lack data that is critical and necessary for developing a tailored flammability standard, i.e., a meaningful and reliable standard with only necessary costs imposed on the manufacturers. Absent such data, only a *worst-case scenario* standard will ensure a significant reduction in the number of deaths, injuries, and property loss resulting from mattress fires. Unfortunately, the manufacturer's costs associated with a worst-case scenario standard might be high if not prohibitive. Some of the necessary data absent from the study, as presented in the ANPR, include the following:

- (1) the type and condition of the mattresses,
- (2) the type of bedding,
- (3) the potential sources or activities causing ignition of mattresses,
- (4) and the specific causes of damage.

First, the five-year study presented in the ANPR clearly indicates the risk of injury associated with fires where mattress or bedding items first ignited; however, the data does not indicate the condition of the mattresses at the time of ignition. Two *condition* factors must be considered when tailoring a meaningful and reliable flammability standard. The first factor is whether the mattresses at the time of ignition were capable of passing the 16 CFR 1632 flammability standard—currently the only flammability standard prescribed by the Commission. The second factor is whether the mattresses at the time of ignition were covered with bedding. To illustrate the influence of the first factor, assume that a significant number of the mattresses involved in the five-year study were produced prior to the 16 CFR 1632 flammability standard, or that they were old, secondhand mattresses where the interior fill of the mattresses (which is often a polyurethane foam) were exposed by puncture, wear and tear, or otherwise. In either case the mattresses would not have passed the current flammability standard and, more importantly, they would not pass any open flame standard. Thus, absent specific mattress condition data, a meaningful and

reliable flammability standard will require that some reasonable exposure of mattress fill be present at the time of testing.

The second factor—whether the mattress at the time of ignition was covered with bedding—also has a potential of influencing a proposed flammability standard. Although the study indicates that the most common open flame sources are lighters, candles, and matches, bedding was the first item to ignite in 60% of the cases reported in the study, which is a much greater heat source than a lighter, candle, or match. Thus, a meaningful and reliable flammability standard will require that laboratory tests are conducted with open flame sources that replicate the heat release rate and fire spread rate of burning bedding, or at a minimum, the test condition of the mattress must include bedding.

Second, the five-year study indicates that while the proportion of mattresses ignited directly by open flame was 24%, in 60% of the cases the bedding was the first item to ignite. However, the study does not suggest the type of bedding materials involved. There are a variety of bedding items that are typically found on, beneath, or against a mattress; for example, blankets, comforters, pillows, sheets, knitted covers, dust skirts, and other decorative items including stuffed animals. Furthermore, these items are produced from a significant number of commercially available materials, natural and manmade, which are colored by various dyes in their manufacture. Manmade materials include nylon, polyester, polyurethane foam, and other synthetics. Natural materials include cotton, feathers, and leather. When ignited the behavior of these materials will vary greatly with respect to the rate of heat release and the rate of fire spread. Thus, a meaningful and reliable flammability standard will require that laboratory tests are conducted with open flame sources that replicate the heat release rate and fire spread rate of burning bedding produced from the more hazardous materials available.

Third, although the study indicates that 70% of the open flame fires involved child play and that 68% of the open flame deaths were to children playing with lighters, matches, or other open flame sources, there is no data that describes the specific activities or sources of the remaining cases (30%) not involving child play with matches or lighters. The availability of such data *might* guide the development of a meaningful and reliable flammability standard with respect to ignition sources and location of the ignition source

on the mattress. However, the reality is that ignition could occur on top of, beneath, or on the side of the mattress by any number of ignition sources (e.g., cigarettes, hair dryers or curling irons, or a clothes iron, as well as candles, lighters, and matches). Thus, a meaningful and reliable flammability standard will require a variety of ignition sources and locations, or at least a worst-case scenario for source and location.

Fourth, it is obvious that the general cause of damages is the fire. However, more specific information could guide the development of a more meaningful and reliable flammability standard. For example, if poisoning or asphyxiation rather than burns caused the injuries or deaths then the standard should be tailored to measure for specific toxic gas emissions. If injury, death, or property damage is caused heat intensity, then the standard should be tailored to measure specific heat release rates and fire-spread rate. Again, a meaningful and reliable flammability standard will require acceptance criteria for heat release rates, fire-spread rates, and toxic gas emissions.

Accordingly the appropriate scope of the flammability standard can be surmised or deduced from my foregoing comments. Given the limited data for tailoring a flammability standard, a meaningful and reliable flammability standard will require the following:

- that laboratory tests are conducted with mattress specimens that replicate some reasonable exposure of mattress fill;
- that laboratory tests are conducted with open flame sources that replicate the heat release rate and fire-spread rate of the more hazardous bedding (i.e., materials that are known to have high heat release rates and fire-spread rates);
- that laboratory tests are conducted with a variety of ignition sources and locations, or at least a *worst case scenario* for source and location; and
- that laboratory test results are measured against acceptance criteria for heat release, fire-spread rates, and toxic gas emissions.

Adverse Consequences on the Existing Cigarette Ignition Standard

The five-year study clearly indicates that smoking materials accounted for more than one-third (5,300 fires of 18,100) of the fires where the mattress or bedding was the first item to ignite. Because of the significant number of smoking related fires, one might conclude that the current cigarette flammability standard is still appropriate and necessary. However, it might be more accurate to conclude that the standard is less effective in preventing fires than expected. Assuming the latter conclusion is true, there are no adverse consequences of an open flame standard on the existing standard. Furthermore, the need for a more effective standard is addressed and incorporated in the flammability standard requirements listed above in the *Scope of the Standard* comments; thus, making the cigarette standard redundant. However, if the Commission does not adopt comparable requirements as listed above, then the cigarette standard may still have some application—although the five-year study suggests that it is ineffective in preventing fires.

Existing Standards or Portions Thereof

A comparison of the thirteen existing flammability standards presented in the ANPR against the requirements identified above suggests that the existing standards are not sufficient to serve as a meaningful and reliable flammability standard and, consequently, not sufficient to ensure a significant reduction in injuries, deaths, and property damage. Several of the tests (TB 129, TB 121, BFD IX-11, ASTM E-1590, NFPA 267, UL 1895, and UL 2060) use gas burners to simulate a newspaper fire in a wastebasket, newsprint in a metal container, or burning bedding as the ignition. The mattress is *sometimes* tested in combination with bedding. However, these tests fail to satisfy the mattress fill exposure requirement and the hazardous bedding requirement.

The BS 6807 test provides multiple ignition source options (cigarette or butane flame exposure) to the top or underside of the mattress. This test also fails to satisfy the mattress fill exposure requirement and the hazardous bedding requirement. Furthermore, the test does not effectively measure heat release rates or fire-spread rates.

The Michigan Roll-up test was designed to test jail pads that had been rolled, stuffed with newspaper, and intentionally ignited by inmates. No test criteria are specified.

Clearly, this test fails to satisfy any of the stated standard requirements, which were based on real life fire scenarios.

The TB 117 test is mandatory in California for polyurethane foam used in mattresses. Although the test has an established fire-spread rate, it lacks other critical measures (toxic gas emissions and heat release rates). Additionally, it only tests one mattress component/material, thus failing the real life fire scenario basis. Similarly, the ASTM E-1474, NFPA 264A, and BS 5852 tests measure only the heat release rates of mattress components/materials.

Materials That Could Improve Mattress Performance

Finally, the ANPR offers no discussion regarding materials that could be used to improve mattress performance in open flame tests. As a starting point, some consideration should be given to materials used in the manufacture of children's bed clothing (many of which are flame or fire retardant), materials used in the manufacture of fire fighting protective gear, and materials used in the manufacture of race car driving apparel.

Thank you for the opportunity to comment. Again, these comments are intended (1) to encourage the Commission to revisit the five-year study and/or seek additional data for the purpose of tailoring a meaningful and reliable flammability standard that is practical in application, i.e., not cost prohibitive, or (2) absent additional data, to encourage the Commission to err on the side of defining a meaningful and reliable flammability standard, rather than erring on the side of minimizing manufacturers' costs; (3) to encourage the commission to clearly define the requirements of meaningful and reliable flammability standard, which will result in the design of effective laboratory tests; and (4) to discourage the commission from selecting one of the existing thirteen tests listed in the ANPR.

Anthony Padilla
1708 Melrose Ave. E. #502
Seattle, WA 98122
E-mail: Padilla@seattleu.edu

Stevenson, Todd A.

From: Padilla, Antonio [padilla@seattleu.edu]
Sent: Friday, October 26, 2001 12:18 PM
To: 'cpsc-os@cpsc.gov'
Subject: Mattress ANPR



Comment--Mattress

ANPR1.doc

My comments for the Mattress ANPR are attached to this e-mail (MS WORD File). If you are unable to open or access the file you can contact me at either e-mail address listed below.

padilla@seattleu.edu

antonio.m.padilla@boeing.com.

Thank you.



Suite 210, 1110 N. Glebe Road, Arlington, VA 22201 USA
Phone: +1 (703) 516-4346 Fax: +1 (703) 516-4350 www.nfpa.org

December 7, 2001

Office of the Secretary,
Consumer Product Safety Commission
Washington, DC 20207-0001

Dear Sirs:

On behalf of the NFPA I encourage the Consumer Product Safety Commission (CPSC) to issue a standard that addresses the performance of mattresses and bedding in fires, as proposed in the Advance Notice of Proposed Rulemaking (ANPR) of October 11, 2001, [*Federal Register*, Volume 66].

Great progress in the reduction of fatal fires has been made in recent decades. CPSC deserves considerable credit for the progress to date, through requirements such as those for cigarette resistance of mattresses and child resistance of lighters. In addition, industry deserves credit, including the Upholstered Furniture Action Council (UFAC), for programs to improve cigarette resistance of upholstered furniture. Unfortunately, thousands continue to be killed and tens of thousands badly injured each year by fires we know how to prevent.

Soft furnishings – upholstered furniture and the combination of mattresses and bedding – remain the principal first fuels and the principal major contributors as fuels in America's fatal fires. This fact justifies further action.

Analysis of fatal fires show that further improvement in resistance to smoldering ignition and improvement in avoidance of room flashover, through greater fire retardancy, would likely produce the greatest reductions in fire loss. Improvement in resistance to small open flame ignition would also produce a significant reduction in fire loss.

NFPA supports actions that would produce major reductions in fire loss and recognizes the need for detailed technical evaluation of the reduction potential of any particular proposed action. Therefore, NFPA urges the CPSC to continue flammability testing in collaboration with the National Institute for Standards and Technology (NIST), with the goal of developing the most effective possible flammability standards and the greatest possible reductions in the number of deaths and injuries resulting from fire involving soft furnishings.

If NFPA can be of assistance to the CPSC in this effort please feel free to call upon us.

Sincerely,
A handwritten signature in dark ink, appearing to read "John Biechman".
John C. Biechman
Vice President, Government Affairs

Washington Office


NFPA's mission is to reduce the worldwide burden of fire and other hazards on the quality of life by providing and advocating scientifically-based consensus codes and standards, research, training, and education.

**National Fire Protection Association**

Washington Office FIREfax® December 07, 2001

Priority Communication

TO: Office of the Secretary,
Consumer Product Safety Commission

FROM:  John Biechman, Vice President
Government Affairs
1110 N. Glebe Road — Suite 210
Arlington, Virginia 22201
Office: (703) 516-4346 Fax: (703) 516-4350

SUBJECT: "Mattress ANPR"

Total Pages: 2 (Including Cover Sheet)

NFPA is the premier source worldwide for the development and dissemination of knowledge about fire and life safety.

NFPA's mission is to reduce the worldwide burden of fire and other hazards on the quality of life by providing and advocating scientifically-based consensus codes and standards, research, training, and education.

*M. L. Muthus
Comm*

December 7, 2001

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Consumer Product Safety Commission
Washington, DC 20207-0001

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If NFPA can be of assistance to the CPSC in this effort please feel free to call upon us.

Sincerely,

John C. Biechman
Vice President, Government Affairs

Stevenson, Todd A.

From: Gipson, Tonya [tgipson@NFPA.org]
Sent: Friday, December 07, 2001 4:25 PM
To: 'cpsc-os@cpsc.gov'
Subject: "Mattress ANPR"



Final CPSC letter re
Upholstry...

Please Reference attachment.

<<Final CPSC letter re Upholstry Flammability.doc>>

John C. Biechman
Vice President, Government Affairs
NFPA International
(703) 516-4346

Stevenson, Todd A

Mattress
Simmons 3

From: jeffrey_simmons@sgs.com
Sent: Friday, December 07, 2001 4:38 PM
To: cpssc-os@cpssc.gov
Cc: dale_holloway@sgs.com
Subject: "Mattress ANPR"

Here are a couple comments in response to the "Standard to Open Flame Ignition of Mattresses/Bedding"

1. In Section E of the proposed rules it is stated "These tests are costly, ranging from \$2000 - \$5000 per test". We perform these full scale fire tests on mattresses for a cost ranging from \$300 - \$600.

The cost for performing a test has never been allowed for discussion in most standards meetings when determining an appropriate safety standard. Cutting costs to perform a test does not address all safety factors involved.

2. This document refers to the bedding being the main contributor to the ignition of the mattress. I agree that it would be appropriate to test the flammability of a mattress using the bedding as an ignition source. The standard "Boston BFD IX-11" has already been developed to test a mattress using the bedding as the ignition source. I beleive this is a valid test for the ignitability of a mattress using a standard bedding and pillow.

I do not see the need for developing a new standard to evaluate a mattress in this manner.

I hope these responses are helpful in determining an open flame standard for the CPSC.

Sincerely

Jeff Simmons
Department Manager Product Evalaution
SGS U.S. Testing Company Inc.

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Visit our websites: <http://www.sgs.com> and <http://www.sgsonsite.com>

McINTYRE LAW FIRM, PLLC

ATTORNEYS AND COUNSELORS AT LAW

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WASHINGTON, D.C. 20005

TELEPHONE 202-659-3900

FAX 202-659-5763

*McIntyre
12/10/01*

December 7, 2001

Via e-mail (cpsc-os@cpsc.gov) and courier

Office of the Secretary
Consumer Product Safety Commission
Room 502
4330 East-West Highway
Bethesda, Maryland

Re: ANPR to Address Open Flame Ignition of Mattresses/Bedding – 16 CFR
Part 1633
Comments of Polyurethane Foam Association

Dear Mr. Stevenson:

The Polyurethane Foam Association¹ (PFA) offers the following comments in response to the Consumer Product Safety Commission's ("CPSC") request for comments in the Advance Notice of Proposed Rulemaking ("ANPR") published in the federal Register on October 11, 2001.²

Overview

The PFA supports the CPSC's efforts to develop a standard that is economical and reasonable to address small open flame ignition of mattresses. The standard should recognize the actual use of mattresses and the fact that bed clothing³ is usually present and tends to amplify the intensity of the original small open flame ignition. This would provide realistic analysis and effective redress of potential flammability hazards to consumers. For the standard to be both practicable and economical, the PFA recommends development of a small-scale composite "bench" screening test.

¹ The Polyurethane Foam Association is a trade association representing manufacturers of flexible polyurethane foam and their suppliers of goods and services.

² 66 Fed. Reg. 51886.

³ Bed clothing refers to items such as mattress pads, comforters, blankets, sheets, bed spreads and pillows.

Need for Representative Composite Test

None of the existing test methods discussed in the ANPR adequately address small open flame mattress flammability since they do not take into account the role of bed clothes in amplifying the initial ignition source. PFA thinks that the work the Sleep Product Safety Council has sponsored at NIST may lead to a viable test method.

PFA believes that a composite test would provide the most reliable and predictable results of how a finished article will behave in a real life fire situation.

The Appropriate Scope for the Anticipated Standard

The PFA recommends the scope of any open flame standard for mattresses include the effect of the bed clothing in addition to the mattress. Bed clothing contributes to the intensity and spread of the original small open flame ignition. Studying the impact of ignited bed clothing would also help the industry in developing new and safer constructions of the bedding ensemble. Since bedding is more likely to become ignited in open flame fires,⁴ a standard that integrates the impact of bed clothes on the conflagration is timely and appropriate.

Small-Scale Composite “Bench” Testing

The PFA agrees with the CPSC that “[a]n appropriate test method should effectively address the hazard as it exists in real-life fire scenarios, representing all materials present, the typical ignition source, and the point of ignition.”⁵ Full-scale tests, although reliable, are expensive and difficult to stage. Small-scale component tests do not adequately characterize and assess the interplay of the various components when they are assembled as a mattress in a real fire. One component may react differently by itself in a fire than when combined with other materials common in bedding products. Therefore, the PFA strongly supports CPSC’s contract research with NIST to develop a small-scale composite “bench” test which could be used for quality control and as a surrogate for a full scale test.

PFA also recommends that these small-scale composite “bench” tests be designed so that they can be performed on the manufacturer’s premises. This would enable the standard to be economically feasible as well as practicable. It would also encourage design innovation among component suppliers as well as bedding manufacturers.

Conclusion

The PFA supports development of a small open flame test standard that will improve upon the fire safety of mattresses and recognize the impact of bed clothing upon

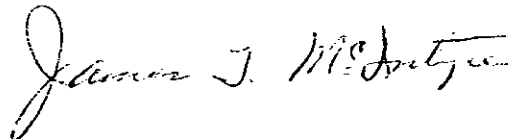
⁴ 66 Fed. Reg. at 51886.

⁵ 66 Fed. Reg. at 51889.

small open flame ignition. The PFA recommends a composite test standard. It also supports development of a small-scale "bench" screening test which could be easily performed by bedding manufacturers or their suppliers of components. This test standard should not obviate the substantial progress that has been made in the reduction of cigarette smoldering ignition of mattresses.

Sincerely,

McINTYRE LAW FIRM, PLLC

A handwritten signature in cursive script, reading "James T. McIntyre". The signature is written in dark ink and is positioned above the printed name.

James T. McIntyre
Counsel to Polyurethane Foam Association

TWO LOGAN SQUARE, 12TH FLOOR
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Telephone (215) 567-7500

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FACSIMILE (215) 567-2737
E-MAIL: jgmanta@kle@rooney.com

December 10, 2001

Via Facsimile and E-Mail

Office of the Secretary
Consumer Product Safety Commission
Washington, DC 20207-0001

Re: Mattress ANPR: to Proposed Standard

Dear Sir or Madam:

Hill-Rom Company, Inc. (Hill-Rom) is pleased to respond to the invitation to comment contained in the Mattress ANPR, Federal Register/Vol. 66, No. 197/Thursday, October 11, 2001/Proposed Rules. Hill-Rom is a manufacturer of, *inter alia*, a number of therapeutic mattress products which are regulated by the FDA and are classified by the FDA as Class 1 or Class 2 medical devices.

Hill-Rom submits the following comments:

1. The Mattress ANPR seeks information concerning, *inter alia*, "the appropriate scope of the standard, that is, particular items that should be included or excluded." It is the considered opinion of Hill-Rom that the following type products should be excluded from the scope of the standard:
 - A. Therapeutic Mattress Products Regulated by the FDA - Therapeutic mattresses classified as medical devices are regulated by the FDA, both for therapeutic effect and safety. The term "consumer product" as defined in the Consumer Product Safety Act specifically excludes:

(H) drugs, devices, or cosmetics (as such terms are defined in sections 201(g), (h), and (i) of the Federal Food, Drug and Cosmetic Act [21 U.S.C.A. § 321(g), (h), and (i)]....

Thus, the Act recognizes that mattress products that are medical devices are subject to regulation under the FDA, including, where applicable, design controls, risk analyses, testing to establish safety and effectiveness, reports of malfunctions as well as adverse effects and recalls. The FDA is very conscious of any changes to the product, particularly those which may adversely affect the therapeutic effect of the product. Therefore, the Mattress ANPR should not apply to mattress products that are classified as medical devices by the FDA.

- B. Mattresses whose use is already restricted by National Fire Code NFPA Standard 101 or the International Fire Code should also be excluded. These codes have regulations to prevent flash over of mattresses in health care facilities by requiring that such mattresses be characterized by low peak heat release rates and low total heat releases in the first ten minutes of a full scale fire test such as ASTM E 1590 or BFD 1X-11. The imposition of an additional regulation based on open flame ignition using a small scale composite test or a component test would increase the overall cost of compliance without reducing the risk of fire leading to flash over.

We will be pleased to meet with representatives of the CPSC to answer any questions or to discuss this matter further.

Very truly yours,

Joseph G. Manta
For KLETT ROONEY LIEBER & SCHORLING
A PROFESSIONAL CORPORATION
Counsel for Hill-Rom Company, Inc.

JGM/ymm

cc: Mr. James Utterback
Mr. Edwin Bills

KLETT ROONEY LIEBER & SCHORLING**A PROFESSIONAL CORPORATION
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E-MAIL: jgmanta@klettrooney.com

December 10, 2001

Via Facsimile and E-MailOffice of the Secretary
Consumer Product Safety Commission
Washington, DC 20207-0001Re: Mattress ANPR: Comments to Proposed Standard

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KLRSPGH1: 154530 1

Office of the Secretary

December 10, 2001

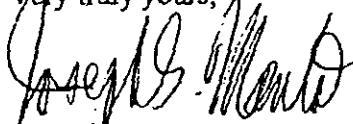
Page 2

Thus, the Act recognizes that mattress products that are medical devices are subject to regulation under the FDA, including, where applicable, design controls, risk analyses, testing to establish safety and effectiveness, reports of malfunctions as well as adverse effects and recalls. The FDA is very conscious of any changes to the product, particularly those which may adversely affect the therapeutic effect of the product. Therefore, the Mattress ANPR should not apply to mattress products that are classified as medical devices by the FDA.

- B. Mattresses whose use is already restricted by National Fire Code NFPA Standard 101 or the International Fire Code should also be excluded. These codes have regulations to prevent flash over of mattresses in health care facilities by requiring that such mattresses be characterized by low peak heat release rates and low total heat releases in the first ten minutes of a full scale fire test such as ASTM E 1590 or BFD 1X-11. The imposition of an additional regulation based on open flame ignition using a small scale composite test or a component test would increase the overall cost of compliance without reducing the risk of fire leading to flash over.

We will be pleased to meet with representatives of the CPSC to answer any questions or to discuss this matter further.

Very truly yours,



Joseph G. Manta

For KLETT ROONEY LIEBER & SCHORLING

A PROFESSIONAL CORPORATION

Counsel for Hill-Rom Company, Inc.

JGM/ymm

cc: Mr. James Utterback
Mr. Edwin Bills

KLRSPGHI: 154530.1

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FACSIMILE COVER SHEET

Facsimile Telephone Number: 215.567.2737

DATE: **December 10, 2001**NUMBER OF PAGES (inclusive): **3**

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Office of the Secretary, CPSC	(301) 504-0127	(301) 504-0800
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CLIENT: **Hill-Rom Company, Inc.**

MATTER:

FROM: **Joseph G. Manta**TELEPHONE NO: **(215) 567-7510****If you do not receive all of the pages, please call 215.567.7500**MESSAGE: **Mattress ANPR: Comments to Proposed Standard**ORIGINAL ☐ WILL ☒ WILL NOT FOLLOW BY MAIL

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*Mattress
Update*



P.O. BOX 1038

December 7, 2001

Office of the Secretary
ATTN: Todd Stevenson
Consumer Product Safety Commission
Washington DC 20207-0001

harrison murphy

Reference: MATTRESS ANPR

Dear Mr. Stevenson:

Ventex, Inc. is pleased to accept the Consumer Product Safety Commission's invitation to comment on the Advance Notice of Proposed Rulemaking (ANPR) for a new Standard to Address Open-flame Ignition of Mattresses/Bedding as published in the Federal Register on Thursday, October 11, 2001.

For nearly a decade, Ventex, Inc. has been a leading manufacturer of fire barrier fabrics designed to promote open-flame resistant performance for mattresses and upholstered furniture applications. I have personally briefed the Commission's staff on several occasions regarding this issue and have openly shared our testing results that reflect the success and performance of state-of-the-art products in addressing this challenge.

Today, Ventex's fabrics are widely used to achieve, full-scale, open-flame resistant performance for healthcare, dormitory, and contract mattresses that are required to pass testing under standards such as California Technical Bulletins #129 and #133, Boston Fire Department IX-11 and British Standard #5852 - Crib 5. These legal requirements originate in elements of both the NFPA 101® The Life Safety Code® and locally based occupancy and fire prevention ordinances and regulations.

Numerous different mattress manufacturers utilizing a wide variety of construction techniques have used our fabrics and designs to achieve passing test results in more than 1000 full-scale flammability tests. Furthermore, many of these same manufacturers routinely offer full-scale, open-flame resistant mattresses for sale to their institutional and contract customers. The enhanced life safety offered by such designs has not been offered to the general public in large part, because there has been no regulatory impetus to do so.

We believe that mandated open-flame resistant performance is reasonably attainable and that, based on our history and that of our customers, it can be incorporated into existing mattress manufacturing processes with minimal additional costs and

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operational disruption. We are encouraged that the CPSC has chosen to take an active role in working towards an enhanced flammability standard for mattresses/bedding. We support the Commission's efforts and stand ready to assist these efforts in any manner needed.

We have carefully reviewed the history of published findings of the CPSC regarding this issue and the recent public commentary in response to the petitions offered by the Children's Coalition. There are a number of areas of common ground that we share with the Commission's findings. There are also elements of CPSC findings that we disagree with – not so much in that we believe that CPSC has not thoughtfully considered the issues at hand, but rather that some of the conclusions drawn may be the result of having been provided with incomplete or even inaccurate information from outside parties.

In the following comments we offer our observations on these issues, starting with our areas of agreement and then moving to those areas that we believe require reconsideration or further study on the part of the CPSC. We have based these statements on our history of successful, full-scale, open-flame resistant testing. We are convinced that clarification of these issues is necessary to provide the Commission with a more faithful and forthright basis from which to make decisions regarding this matter of critical life safety.

Areas of Agreement

In the body of the ANPR, CPSC makes the following statements that we concur with wholeheartedly:

- *"... mattress/bedding fires ignited by small open-flames are a significant problem not addressed by the existing standard."*
- *"... open-flame ignition of mattresses/bedding continues to cause a significant number of deaths and injuries, especially to children."*
- *"To be effective, the standard must reflect the actual use of mattresses."*
- *"A full-scale test is generally considered the most reliable in measuring product performance, especially when the product contains multiple materials in a complex construction such as a mattress or mattress/bedding combination."*
- *"One serious drawback of component tests is their inability to accurately predict the real life performance of the full product..."*

While not explicitly stated in the ANPR, we believe that it is fair to interpret an unstated objective of the CPSC that the final result of this process is one whose core intent is not easily circumvented by designs that attempt to cheat the spirit of the regulation that may result from this process. Further, we believe that the public interest is best served by development of a sleep set flammability performance

standard that is structured to thwart designs and constructions that frustrate the intent and spirit of any new standard.

Areas Deserving of Reconsideration

There are statements and positions represented in the ANPR that require comment as to the nature of the conclusions that may be drawn from them. Additionally, there are elements of this issue that have not previously been openly considered that require due attention. As appropriate, I have appended each area for reconsideration with our recommendation for addressing the topic at hand.

Impact of the Weight of Bedclothes on Mattress Flammability

The analysis and testing that has been performed at NIST has been beneficial in assessing the impact of the thermal activity and heat flux insult relative to the primary or complementary ignition of bedclothes. However, one critical omission from this analysis to date has been a comprehensive assessment of the impact of the weight of the bedclothes that are intimately involved in the ignition scenario. Our understanding of the proposed NIST test protocol is that it uses a moving foot to follow barrier technologies that are "retreating" or melting away from the area of the fire insult. We do not believe that this is a complete proxy for real-world performance assessment involving the weight of bedclothes. As a result, the proposed test only addresses half of the risk.

In the real world, bedclothes have weight. This mass of bedclothes has genuine import in the determination of success or failure of an open-flame resistant mattress design that is being tested on a full-scale basis.

Unless all components of a mattress or sleep set design have been engineered to be fire resistant (a proposition that is not likely for residential sleep sets given the economic impact and comfort reduction implications) then the consideration of weight is not as crucial. However, since many of the prevailing approaches being considered use a barrier approach to create a char that protects the unmodified fuel load inside the mattress (foams, battings, fillings and air space) from the ignition source, the ability of the barrier to withstand the gravitational effect of the bedclothes' weight is critical to its success or failure – this is commonly referred to as the "char integrity". If the barrier is effective against heat and flame, but finds its performance compromised as it crumples beneath the weight of a sheet, blanket or pillow then the desired protection will not be attained.

We believe that incorporating the placement of a stainless steel mesh screen, constructed to have a weight and density proportional to standard bedclothes (fitted sheet, flat sheet, blanket and pillow) and of a size not to exceed the area of the initial fire insult would offer the ability to gauge the weight impact on the mattress performance. If the design of the protective elements were insufficient to protect

the inner mattress components from the weight of the bedclothes then the protection would be breached and the fire insult would be able to access the more highly flammable mattress components on the interior; such a result would allow a truer assessment of the mattresses potential for real-world performance.

The Boston Fire Department IX-11 full-scale fire test incorporates bedclothes in its protocol. I am familiar with a number of product offerings that can pass test standards such as California Technical Bulletin #129 and are unable to perform under the more stringent performance requirement of BFD IX-11. I believe that the intent of the BFD IX-11 testing protocol offers examples of methodology that can be of benefit to this process.

Full Scale vs. Small-scale Testing:

The consideration of using small-scale or bench testing as a proxy for full-scale mattress performance is troubling on a number of levels. The additional consideration of allowing such testing to be conducted on-site at mattress manufacturing operations is of great concern to us. In the interest of achieving a standard that passes in both the lab and the bedroom, the evaluation of small-scale testing must be carefully scrutinized.

The wide variety of mattress designs (smooth-top, quilted, tape-edged, side seamed, pillow-top, one-sided, two sided) and the practically limitless combination of construction components (ticking materials, tapes, thread, fillings, innersprings) work to dramatically increase the complexity of the process for standard formulation to assess flammability performance. The inherent complexity of this proposition argues against attempting to dilute the effectiveness of design and material selection consideration through small-scale bench testing on miniature mattresses, individual components or on isolated composite elements, such as a panel or border cut away or a section of the tape-edge construction. Nor does small-scale testing present a way to assess the impact of geometric variances in mattress construction, such as the crevices that exist between a mattress and foundation or the differential of mattress thickness that is reached as comfort elements and price point increase.

To-date, no evidence has been offered by any party in the course of this process that establishes a definitive, quantifiable link between small-scale results and expectations for full-scale performance with regards to open-flame resistant performance. The expectation that small parts of a mattress can be predictive of the complex and dynamic interaction that occurs when a mattress is ignited is erroneous. It is fair to imagine that this type of complex interaction is one of the reasons that crash and bumper testing of motor vehicles is done on a full-scale basis and that child safety seat testing is conducted on a full-scale basis, rather than testing the just the fabrics and materials on a component basis.

Beyond the inability for small-scale testing of miniature mattresses to serve as an indicator of full-scale flammability performance, there is the concern that arises from the potential risks of such testing being conducted inside mattress manufacturing plants and not in controlled laboratory environments. A real-life, twin size mattress and foundation that are not built to attain open-flame resistant performance can reach a peak rate of heat release in excess of two megawatts (2,000 kilowatts) in a matter of minutes. This amount of energy is sufficient to cause a standard test room to reach flashover. If a miniature sleep set were built to be 1/4 of the real-life size and tested in a comparably sized down test facility, the same flashover result could occur if the design concept failed.

Some of the commentary has claimed that the current testing capacity is insufficient to meet the demands of potential standards that are being considered. That argument has been used as a basis for advocating small-scale or even manufacturing plant-based testing. This ignores the proven realities of the marketplace where existing suppliers of professional testing services can reasonably be expected to increase supply to meet the new demand. This is especially likely with the advanced warning provided by the length of the regulatory process.

The expense of testing has also been identified as a reason to support small-scale, localized testing. The costs of \$2,000 to \$5,000 per test cited in the Federal Register are not accurate. Actual testing costs are more on the order of several hundred dollars per test. Furthermore, the economic reality is that current testing costs may even be negotiated downward as demand for such services increases.

Finally, it is not practical to suggest that testing performed on-site by a mattress manufacturer can be equated to the impartial results gained from a qualified, independent testing facility. These facilities are able to employ staffs of professionally trained engineers and testing technicians, they can maintain complex and potentially volatile testing environments and are not subject to potential conflicts of interest regarding test outcomes. Independent facilities exclusively used for such testing also do not pose the risk that testing at a mattress plant filled with traditionally, highly flammable filling materials does – a risk that many insurance carriers, fire marshals and occupational safety professionals might look upon less than favorably.

In consideration of some of the economic impact related to the testing costs posed by this pending standard setting, there is some limited application for small-scale testing to be conducted in qualified lab settings. Once a mattress platform design is proven to meet the standard under full scale testing scenarios, it would be appropriate to investigate the benefit of allowing small-scale testing on component materials for the basis of substitution of materials without having to incur the cost of full-scale testing. For instance, if a mattress design were conceived and tested

successfully, it would be reasonable to allow the manufacturer to substitute individual components on the basis that their small-scale performance was equal to or better than that which they were being used to replace.

CONCLUSION

On its website banner, the CPSC proclaims that it is "Saving Lives and Keeping Families Safe." The opportunity for the Commission to accomplish this mission through comprehensive, practical and enforceable regulation concerning the open-flame resistance performance of mattresses and bedding is significant. The comments I have offered are intended to complement this objective. I appreciate in advance the consideration that the Commission will give to my comments and am available at your convenience to provide any further clarification of the issues that I have raised.

Sincerely,
VENTEX, INC.

A handwritten signature in black ink, appearing to read 'H. Murphy', written in a cursive style.

Harrison Murphy
President

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December 10, 2001

By Hand-Delivery

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c/o Fourth Floor Reading Room
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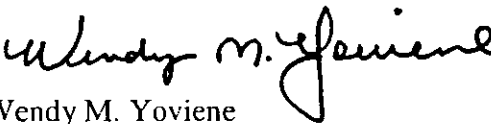
Re: Mattress ANPR Comments By The Decorative Fabric Association Et Al.

Dear Mr. Secretary:

On behalf of the Decorative Fabric Association, the Coalition of Converters of Decorative Fabrics and Calico Corners, please accept the enclosed comments for filing. I have enclosed an original and six copies. So that I may complete my records, please date stamp the sixth copy and return it to my courier for return delivery to me.

Please do not hesitate to contact my colleague Richard Taffet at 212-603-8925 or me at 202-508-4388 should you have any questions or need anything further. Thank you.

Sincerely,


Wendy M. Yoviene

Enclosures

BEFORE THE CONSUMER PRODUCTS SAFETY COMMISSION

WASHINGTON, D.C.

----- X
In the matter of: :
 : 66 FR 51886
Mattress ANPR : October 11, 2001
 :
----- X

**COMMENTS OF THE DECORATIVE FABRIC ASSOCIATION,
THE COALITION OF CONVERTERS OF DECORATIVE FABRICS
AND CALICO CORNERS**

The Decorative Fabric Association ("DFA"), Coalition of Converters of Decorative Fabrics ("CCDF") and Calico Corners submit these comments in response to the Advanced Notice of Proposed Rulemaking issued by the Consumer Product Safety Commission ("CPSC" or "Commission") on October 11, 2001 in connection with a standard to address open flame ignition of mattress/bedding (the "ANPR"). Specifically, these comments seek to address the risk of injury that may be an appropriate subject for a standard and the appropriate scope for any such possible standard.

As an initial matter, the DFA, CCDF and Calico Corners wish to reaffirm their position as fully supportive of the various efforts underway seeking to address the risks of injury and death resulting from mattress fires. Each of these commenters have worked diligently, and will continue to do so, in connection with these issues and others relating to household fire safety, including in connection with efforts at the Commission, in the State of California, and in other forums. The DFA, CCDF and Calico Corners are convinced, however, that any approach taken must be fashioned so as to provide the most effective solution possible for addressing a properly defined risk, but without imposing unnecessary burdens or costs, or limiting the ability of

consumers to exercise their choice in selecting items for their homes. Nor should consumers, workers or others be exposed to unintended health or safety risks as the result of any regulation.

Accordingly, the DFA, CCDF and Calico Corners submit that:

(i) to the extent a standard is determined to be appropriate and necessary, the risks addressed should be those as defined in the ANPR resulting from “flashover”;

(ii) current information strongly suggests that the scope of any possible flammability standard should be focussed upon regulation of mattresses; and

(iii) until ongoing testing is completed, including at the National Institute for Science and Technology (“NIST”), adoption of any standard would be premature.

BACKGROUND

The following briefly describes the interests of the DFA, CCDF and Calico Corners in the ANPR.

DFA

The DFA is comprised of approximately 60 member companies engaged in the wholesale distribution of highly-styled domestic and imported decorative fabrics throughout the United States. The membership generates gross annual revenues of approximately \$1 billion, but approximately 50% of DFA member companies have gross sales of less than \$5 million, and another approximately 20% generate less than \$10 million in sales annually.

The decorative fabrics sold by DFA member companies are primarily distributed as customer’s own merchandise (“COM”) through interior designers. Such fabrics are used for a myriad of household items, including upholstered furniture, bedding, draperies and wallcoverings. Because of the COM nature of the goods, and its distribution through interior designers, DFA members do not have control over or knowledge of the end use to which their

fabrics are placed. Moreover, the same fabric is often used for different applications, even by the same end user.

CCDF

The CCDF is a coalition of the leading home furnishing and decorative fabric converters in the United States. CCDF's members have annual sales of approximately \$1 billion.

As converters, CCDF's members create or acquire proprietary rights in original designs, which they then cause to be printed, woven or otherwise fabricated by third parties into a multitude of fabric types. Finished fabrics are then sold by the converters worldwide for a variety of end uses, including upholstered furniture, bedding, wallcoverings, and other home furnishing applications. In connection with bedding products, converters sell to bedding manufacturers who in turn use fabrics for all types of bedding products. Converters also sell fabrics that may ultimately be used in bedding applications to wholesalers, including DFA members, as well as to retailers such as Calico Corners. In connection with all of these sales, *converters are not aware of, and do not control, the use to which the fabric sold will be placed or even if it will be used for bedding applications.*

Calico Corners

Calico Corners is a leading retailer of decorative fabrics throughout the United States. It presently has approximately 120 retail locations. Fabrics sold by Calico Corners are used extensively by consumers for bedding products, as well as for other home furnishing uses. The actual determination of how any fabric sold by Calico Corner will be used, however, is made by the consumer.

DISCUSSION

A. “Flashover” Is Properly Identified In The ANPR As The Risk That Should Be Addressed By A Possible Standard

To the extent a standard is ultimately determined to be appropriate and necessary, the DFA, CCDF and Calico Corners support the conclusion in the ANPR that “limiting the fire intensity and preventing flashover in mattress/bedding fires” would be the risk appropriately addressed. Moreover, the DFA, CCDF and Calico Corners support the position of the ANPR that because few materials can resist a large ignition source such as burning bedding, the typical approach of preventing ignition of a mattress through a product performance standard would not be reasonable.

As stated in the ANPR:

Flashover occurs when a fire becomes so intense that all exposed surfaces ignite nearly simultaneously, and quickly spreads through the structure. While victims intimate with the ignition may still be at risk due to their direct contact with the burning mattresses and bedclothes, preventing flashover may reduce the number of casualties to a portion of the other victims inside as well as those located outside the room of fire origin.

We understand this conclusion is supported by the testing being undertaken at NIST, which found that nearly 60% of fire deaths occur after flashover in rooms other than the ones in which the fire started.¹

Accordingly, if a standard is determined to be appropriate, the “risk of injury” resulting from flashover would be the proper subject matter for such a possible regulation.

¹ See T.J. Ohlemiller, J.R. Shields, R.G. Gann, National Institute of Standards and Technology, *Flammability Assessment Methodology for Mattresses 4* (June 2000) (hereafter “NIST Phase I”) (“Nearly 60 percent of the fire deaths in the U.S. occur in rooms other than the ones in which the fires started. The fatal fires have proceeded beyond flashover, the point at which the entire room is in flames. The high heat release rate and the resulting buoyancy push smoke from the room and into other parts of the dwelling. The people most often die from inhalation of this smoke. Prior to a flashover, fire forces relatively little smoke from the room, and is fairly dilute. Thus, preventing flashover would be a major step in reducing fatalities from smoke inhalation”).

B. The ANPR Properly Defines The Scope Of A Possible Standard

The ANPR's focus on mattresses as the possible subject of a standard properly identifies a scope that will most effectively address the risk of flashover without the imposition of undue and unnecessary burdens and costs.

As stated in the ANPR, based upon CPSC field investigations, while 60% of mattress fires originate with bedding as the first item ignited, 24% of the cases still involve ignition of the mattress in the first instance. Thus, regulation of bed clothes will not eliminate the risks of flashover resulting from fires ignited directly on the mattress.

In addition, as has been determined by NIST, flashover will not occur until the mattress ignites; ignition of bed clothes will not create heat sufficient to result in flashover.² Accordingly, while bed clothes may create an ignition source larger than a small open flame, they will still only serve as an ignition source of the mattress or other items that may have a composition sufficient to create flashover. Further, even when ignited by a source other than bed clothes – e.g., a match, candle or lighter – mattresses are still capable of creating sufficient heat to result in flashover.³

In these circumstances, while it is, of course, important to understand the interaction between bed clothes and mattresses, the most effective and least burdensome and least costly approach for any standard would be to protect (perhaps by a barrier material) or treat the mattress filling so that flashover is delayed or avoided. We understand that techniques and technologies

² See also NIST Phase I at 10.

³ See, e.g., Memorandum from A. Tenney, CPSC, to M. Neily, CPSC, "Current Research Program to Evaluate Open-Flame Mattress Flammability" at 4 (Apr. 25, 2001)(on file with CPSC). We also understand that flashover has become more problematic with the use of new mattress materials, including as a result of efforts to comply with 16 C.F.R. 1632. See Memorandum from R. Medford and M. Neily to the Commission, "Options to

presently exist to achieve such protections without involving modifications or treatments of bed clothing. By limiting the scope of any standard to the mattress itself, including through use of a barrier alternative, any standard would eliminate the dilution of the standards effectiveness, and also would avoid imposing undue burdens and costs.

First, it must be recognized that the number and type of items placed on the top of beds that may become an ignition source is indefinable. These items may include various bed clothing (sheets, pillow cases, duvet covers, quilts, comforter, etc.), as well as other items such as children's dolls and teddy bears, newspapers and magazines, clothing and any other item that may be in a household. Any attempt to determine the fire ignition properties of each or all of these types of items would not be practicable, or even possible.

Moreover, regulating some but not all of these items would not effectively limit the risk of flashover as the result of mattress ignition. For example, even if filled bed clothing such as comforters were required to incorporate a barrier fabric or be made from FR yarn, the size or scope of the potential fire that might ignite the mattress would likely not be impacted in the least. Other items of non-regulated bed clothing or non-bed clothing items that are also on top of the bed would still provide an ignition source easily sufficient to ignite the mattress. Indeed, regulating certain bed clothing would also not likely reduce the extent of protection directly for the mattress. Simply, there would be no objective means to determine that the regulated bed clothing would in fact be used on any particular bed, and even if such bed clothing were used what other unregulated items would also be on top of the bed at the same time that could create sufficient heat to ignite a less than adequately protected mattress. Needless to say, no regulation

Address Open Flame Ignition of Mattresses/Bedding and Petitions of the Children's Coalition for Fire-Safe Mattresses," at 15 (Aug. 16, 2001)(on file with the CPSC).

will reasonably proscribe the type of items that consumers will be permitted to put on top of their beds.

Therefore, whether or not any bed clothing is regulated, the risk of flashover would be entirely unmitigated unless the mattress and its filling are adequately addressed. Accordingly, the only effective focus of any regulation would be on the mattress itself.

For similar reasons, regulation of bed clothes would not effectively limit the extent to which items in the room, other than mattresses, may be ignited and thereby create sufficient heat to result in flashover. If a filled comforter is regulated, but sheets, pillow cases, teddy bears, newspapers and garments are not, the ignition of draperies and other items in a persons bedroom will not be avoided. This, however, should not even be an issue for purposes of the ANPR. As discussed above, the risk that is the proper subject matter of any standard would be flashover caused by mattress fires.

Furthermore, the additional burden and expense of any regulation directed to bed clothes would not be insubstantial, and could not be justified. As remarked above, DFA and CCDF members, as well as Calico Corners, do not control or even necessarily have knowledge regarding the specific uses to which the fabrics they sell will be put. Thus, for example, the very same fabric may be sold for a bedding use, as well as an upholstered furniture or drapery use. This would not be uncommon in the context of a bedroom that is designed with coordinated fabric ensembles.

The decision regarding how a fabric will be used is also often times made long after the fabric supplier has sold the item. For example, it would not be uncommon for a workroom to receive 20 yards of the same fabric to make bed clothes and draperies for a specific customer. The decision regarding which yard to use for which item would not be made until the actual item

is produced at the workroom, and even then changes could be made. Even assuming it would be possible for a supplier of fabrics (such as a DFA or CCDF member, or Calico Corners) to determine how each yard of its goods would be used, the costs of maintaining duplicate inventories or specially treating (and testing) specific yardage would be prohibitive, especially when no greater effectiveness would be provided to a properly defined mattress standard.

Another cost that would be imposed would be the diminishment of consumer choice in the bedding and other items that would be available if a regulation of bed clothing was adopted. A significant percentage of the fabrics sold by DFA and CCDF members and by Calico Corners are imported to the United States or produced domestically by mills that simply would not be able to modify their processes to allow for the production of a fabric that would meet a FR regulation, especially where short orders of only a few hundred yards are involved. If the regulation, for example, called for including FR yarns in bed clothing, the capital investment required to provide the specialized processes needed to include such yarns would not be reasonable. Equally damaging would be the effect of any FR regulation on the aesthetics of stylized decorative fabrics. It is likely that such affects would render the fabric unsaleable because it would lose its appeal to ultimate consumers.

In sum, extending any regulation beyond mattresses to bed clothing would provide no greater effectiveness in addressing the risk of flashover from mattress fires, and would impose undue and ruinous burden and costs that in no way could be justified.

**C. Prior to Completion of NIST's Testing
A Standard Would Be Premature**

As described in the ANPR, additional testing and research is being pursued, including at NIST, in connection with defining the most appropriate test method for addressing mattress fires, and to more fully understand the performance characteristics of mattresses. The DFA, CCDF

and Calico Corners fully support these efforts. Until concluded, however, these commenters respectfully submit that development of a possible standard would be premature.

CONCLUSION

For the foregoing reasons, the DFA, CCDF and Calico Corners submit that the ANPR correctly identifies the risk of flashover resulting from mattress fires as that which should be addressed if a mattress standard is determined to be appropriate and necessary. The ANPR also properly defines the scope of any such possible standard. Finally, prior to formulation of any standard, these commenters submit that the testing and research now being undertaken, including at NIST, should be completed.

December 10, 2001

Respectfully submitted,

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December 10, 2001

Office of the Secretary
U.S. Consumer Product Safety Commission
Washington, DC 20207-0001

**Re: Mattress ANPR: Comments of the National Cotton Council Concerning the
CPSC ANPR to Address Open Flame Ignition of Mattresses (16 CFR 1633)**

Dear Mr. Secretary:

These comments are submitted by the National Cotton Council (NCC) in response to the Consumer Product Safety Commission (CPSC) Advance Notice of Proposed Rulemaking (ANPR) (66 FR 51886; October 11, 2001) for a flammability standard to address open flame ignition of mattresses.

The NCC is the central organization of the U.S. cotton industry, representing producers, ginner, oilseed crushers, merchants, cooperatives, warehousemen and textile manufacturers in 18 states. NCC represents approximately 25,000 cotton producers and about 1,100 gins that annually gin about 17 million bales of cotton. NCC mill members use over 7 million bales domestically to produce cotton textiles. NCC has a long history of commitment to product safety and has worked cooperatively with CPSC on flammability issues since CPSC was formed in 1974. Several of NCC member companies produce component fabrics for mattresses (e.g., mattress tickings) and "top of the bed"/bedding textile products (e.g., mattress pads, sheets, pillowcases, blankets, bedspreads, and comforters).

NCC supports the development of a reasonable and appropriate standard to address open flame ignition of mattresses. Reducing the likelihood of flashover is the risk that should be addressed and the standard should be limited to mattresses. More specific discussion of these points follows.

1. CPSC should development of an open flame ignition standard for mattresses.

NCC supports this rulemaking to address open flame ignition of mattresses. NCC and American Textile Manufacturers Institute (ATMI) have partnered with the Sleep Products

Safety Council (SPSC) and other stakeholders on the ongoing mattress/ bedding research project at the National Institute of Standards and Technology (NIST). Even though the NIST study is not complete, it has already yielded important results that should be useful to the CPSC as this rulemaking goes forward. The NIST results should be used by the CPSC to determine which standard – either an existing standard (e.g., California Technical Bulletin 129 in whole or part) or a new standard developed by CPSC based on the NIST research -- would be the most appropriate to reduce the unreasonable risk presented by mattress fires started by open flame ignition sources. The standard should be developed in an open and transparent process.

CPSC should also determine the effect of open flame ignition resistant treatments for flame resistance on cigarette ignition propensity. Ignitions caused by cigarettes and open flames are different types of combustion that are retarded by different mechanisms.

2. “Flashover” is properly identified in the ANPR as the risk that should be addressed by an open flame standard for mattresses.

As CPSC staff concluded in the ANPR (66 FR 51887; 10/11/01), limiting the fire intensity and reducing the likelihood of flashover in mattress fires is the appropriate risk/objective for CPSC to address in any mandatory open flame standard for mattresses that is determined to be appropriate and necessary. Preventing flashover greatly increases egress time and could cut the deaths from mattress fires by one-third (R.G. Gann, Presentation *ISPA Workplace Safety & Management Conference*, Chicago, IL, Nov. 29, 2001).

3. The CPSC ANPR properly limits the scope of the rulemaking to mattresses.

Phase One of the NIST research on mattress/bedding flammability has shown that the bedding combination (i.e., mattress pad, sheets, pillow, blanket, comforter) produces peak heat release rates that ranged from 50 kW to about 200 kW (NIST publication: *NISTIR 6497*, June 2000). The worst case most severe bedding combination produced only about 20% of the heat (about 200kW) required to reach “flashover”. Without the involvement of the major fuel load, the mattress, even the most severe bedding combination produces much less heat than needed to reach flashover.

Studies by the CPSC, SPSC and the National Association of State Fire Marshals (NASFM) discussed in the CPSC ANPR (66 FR 51886; 10/11/01) show that bedding was the first item to ignite in about 60% of mattress fire cases observed; the mattress was ignited directly by open flame in about 24% of the cases. These data suggest that for about 40% of mattress fires the fire starts on the mattress without the involvement of the bedding/top of the bed products.

From a consumer safety standpoint it would not be appropriate for CPSC to develop and promulgate an open flame standard for mattresses whose fire performance in any way is dependent on what consumers put on top or around a bed. Consumers purchase and use top of the bed products in a multitude of combinations, depending on their personal

tastes, individual needs, and disposable incomes. Consumers choose different combinations of these products depending on the area of the country, season, climate, fashion, etc.. Therefore, whatever mandatory open-flame standard CPSC develops for mattresses should not involve the top of the bed product, should be restricted to the mattress, and should attempt to restrict the fuel load contributed to a fire by the mattress to prevent flashover.

Any mandatory open flame standard for mattresses that CPSC promulgated should be reasonable and appropriate, technologically feasible, and cost beneficial. NCC appreciates the opportunity to provide these comments to CPSC for this rulemaking to address open flame ignition of mattresses. Please contact me if there are any questions (202-745-7805; pwakelyn@cotton.org).

Yours sincerely,

A handwritten signature in black ink, appearing to read 'P. Wakelyn', with a stylized flourish at the end.

Phillip J. Wakelyn, Ph.D.
Senior Scientist, Environmental Safety and Health
National Cotton Council



AMERICAN TEXTILE
MANUFACTURERS INSTITUTE

December 10, 2001

Office of the Secretary
U.S. Consumer Product Safety Commission
Washington, DC 20207-0001

Re: Mattress ANPR

Dear Mr. Secretary:

The American Textile Manufacturers Institute (ATMI) appreciates the opportunity to comment on the Consumer Product Safety Commission's (CPSC) Advance Notice of Proposed Rulemaking (66 *Federal Register* 51886; October 11, 2001) for a standard to address open flame ignition of mattresses/bedding.

ATMI is the national trade association for the domestic textile industry. Our member companies operate in more than 30 states and process approximately 70 percent of all textile fibers consumed by plants in the United States. ATMI has a long history of commitment to product safety and has worked cooperatively with the CPSC over the past 25 years on textile flammability issues.

Several of our members produce ticking fabrics for mattresses and several ATMI members produce "top of the bed" textile products, including mattress pads, sheets, pillowcases, pillows, blankets, bedspreads, and comforters.

1. ATMI supports the development of an open flame mattress standard.

In 1998, ATMI partnered with the Sleep Products Safety Council (SPSC) to support the ongoing mattress and bedding research project at the National Institute of Standards and Technology (NIST). ATMI contributed funding to this research and several of our members contributed "top of the bed" products for the study. While the NIST study is not yet complete, ATMI believes it has



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already yielded important results that are useful to the CPSC. The NIST results should be used by the Commission to determine which standard – either an existing standard or a new standard developed by NIST -- would be the most appropriate to reduce the risk from mattress fires started by open flame ignition sources. ATMI supports a standard that could be promulgated in a relatively short period of time.

2. “Flashover” is the risk that should be minimized by an open flame mattress standard.

ATMI agrees with the CPSC staff that preventing flashover in mattress/bedding fires is the appropriate risk to be addressed by a mandatory open flame mattress standard. As stated in the ANPR:

While victims intimate with the ignition may still be at risk due to their direct contact with the burning mattresses and bedclothes, preventing flashover may reduce the number of casualties to a portion of the other victims inside as well as those located outside the room of fire origin.¹

3. The scope of this standard should be limited to mattresses.

Phase I of the NIST/SPSC research on mattress/bedding flammability has shown that the **worst case** bedding combination – mattress pad, sheets, pillow, blanket, comforter – does not begin to approach the amount of heat necessary to reach flashover. In fact, the NIST work showed that the most severe bedding combination produced up to 20% of the heat needed to get to flashover. Without the involvement of the mattress fuel load, the most severe bedding combination fell way short of producing enough heat to reach flashover. If flashover can be prevented, escape time is greatly increased therefore many lives should be saved.

The ANPR states that approximately 60% of mattress fires originate with top of the bed textile products as the first item to ignite; 24% of mattress fires involve direct ignition of the mattress. This information is based on findings from studies done by the CPSC, SPSC and the National Association of State Fire Marshals (NASFM). Regulation of top of the bed items will not eliminate or reduce the risks of flashover resulting from the 24% fires started when the mattress is first to ignite.

¹ 66 *Federal Register* 51886; October 11, 2001. 16 CFR Part 1633. Standard to Address Open Flame Ignition of Mattresses/Bedding; Advance Notice of Proposed Rulemaking.

We believe that most U.S. textile manufacturers already voluntarily test the small open flame ignition of top of the bed products using these voluntary ASTM test methods:

ASTM D4151 *Standard test method for the flammability of blankets*

ASTM D1230 *Standard test method for flammability of apparel textiles*
(used for pillows, sheets and comforters)

In addition, ATMI believes it would be unwise from a consumer safety standpoint to develop and promulgate a safety standard for mattresses whose flammability performance is in any way dependent on what consumers may or may not put on top or around a bed. Consumers purchase and use top of the bed products in a multitude of combinations, depending on their personal tastes, individual needs and disposable incomes. Consumers may choose different combinations of these products depending on the season, climate, and fashion. There is no way of predicting what may or may not be used at a given time.

Please contact me at 202-862-0518 or padair@atmi.org if you have questions or need additional information.

Sincerely,

A handwritten signature in black ink, appearing to read "Patty Adair".

Patty Adair
Asst. Director,
Textile Products & Standards